

The Deepwater Program

Reducing risk in the Maritime Domain.



by RADM PATRICK M. STILLMAN
Program Executive Officer, U.S. Coast Guard Integrated Deepwater System

With his approval of the National Strategy for Maritime Security in 2004, President George W. Bush reaffirmed that the safety and economic security of the United States depends upon the secure use of the world's oceans. "The United States has a vital national interest in maritime security," the new strategy states. "We must be prepared to stop terrorists and rogue states before they can threaten or use weapons of

mass destruction or engage in other attacks against the United States and our allies and friends."

The U.S. marine transportation system's ports and waterways are at once both a vulnerable and valuable dimension of the global war on terrorism. As a result, ADM Thomas H. Collins, the Commandant of the Coast Guard, has placed a high priority on bolstering



Figure 1: The Deepwater Program's network-centric system for command and control will link all of the Coast Guard's operational assets with a common operating picture and improve connectivity with the U.S. Navy, other federal agencies, and local first responders. Rich Doyle, USCG.

maritime security through vigorous implementation of the Maritime Transportation Security Act of 2002; the development of an enhanced maritime security regime; improved Maritime Domain Awareness; and the modernization and recapitalization of the Coast Guard's aging legacy assets and systems for command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR). It is for this reason that the Integrated Deepwater System plays such an important role in reducing risk in the Maritime Domain—beginning with the U.S. ports, waterways, and coastal areas that are so vital to the security and economic well-being of the United States and the safety of our citizens.

A Centerpiece for Transformation

"Recapitalizing the Coast Guard is the foundation of our ability to continue improving maritime security while facilitating the flow of commerce," ADM Collins testified to Congress in 2005. "The Integrated Deepwater System is the centerpiece for the Coast Guard's transformation and my top capital priority." Deepwater's three new classes of more capable cutters and associated small boats, manned and unmanned aircraft, integrated logistics, and improved C4ISR all will lead to a Coast Guard able to perform its multiple missions substantially more effectively well into the 21st century.

Last year, the Department of Homeland Security approved a revised post-September 11, 2001, implementation plan that aligns the Deepwater Program with the department's strategic goals of threat awareness, prevention, and protection against terrorist attacks; and response and recovery, should they occur. The revised plan, based on a comprehensive performance-gap analysis, updated the original pre-9/11 Deepwater Program by requiring improved capabilities on all assets; retaining, upgrading, and converting aviation legacy assets as part of the final asset mix; and adjusting the program's overall asset delivery schedule to improve operational effectiveness at an affordable cost.

The revised plan ensures Deepwater cutters and aircraft will be equipped with the right systems and capabilities to operate successfully in our more challenging post-9/11 threat environment. The Deepwater Program, projected to be a progressive \$24 billion, 25-year modernization, conversion, and recapitalization effort, now incorporates requirements for such improved functional capabilities as:

- A network-centric system for C4ISR improvements to harness the power of an interopera-

ble network that will improve Maritime Domain Awareness and provide a common operating picture. This is key to the Coast Guard's ability to lead the interagency effort to know and respond to maritime conditions, anomalies, vulnerabilities, and threats. Improvements to C4ISR enable earlier awareness of events through the more effective gathering and fusing of terrorism-related information, analysis, coordination, and response—all critical to detecting, deterring, and defeating terrorist attacks. Upgrades to Deepwater surface assets, for example, contribute directly to improved intelligence collection and fusion through sophisticated Shipboard Sensitive Compartmentalized Information Facility sensors and increased data-exchange bandwidth.

- Improved maritime-security capabilities, such as increased speed and integrated weapons systems on selected Deepwater cutters, essential to higher levels of maritime homeland security during a terrorist attack, opposed boardings, and other high-risk operations.
- Helicopter airborne use of force and vertical insertion and delivery capabilities to allow helicopters to provide warning and/or disabling fire and to deploy, deliver, and recover boarding teams safely and more effectively.
- Upgraded fixed-wing aircraft for long-range surveillance to increase Maritime Domain Awareness and reduce maritime patrol aircraft shortfalls in operating hours; organic Coast Guard air transport will be able to deploy Maritime Safety and Security Teams and National Strike Force teams faster for response with their equipment.
- Improved capabilities for anti-terrorist/force protection on select Deepwater assets with all-weather self-defense and the ability to protect high-value assets; assets will have the capability to engage terrorists with higher assurance of survivability and continued mission capability.
- Improved capabilities for detection and defense for chemical-biological-radiological (CBR) threats—essential to survival and continued operations during a CBR attack involving a weapon of mass destruction.

It is not difficult to envision how these more-capable Deepwater platforms will enable the Coast Guard to maintain a more vigilant and responsive maritime presence along the U.S. maritime border, starting at

U.S. ports, waterways, and coastlines and extending seaward to wherever the Coast Guard needs to be present or to take appropriate maritime action. This is the layered maritime defense mandated by the National Strategy for Maritime Security.

As the new strategy states, “Ports in particular have inherent security vulnerabilities: They are sprawling, easily accessible by water and land, close to crowded metropolitan areas, and interwoven with complex transportation networks. Port facilities, along with the ships and barges that transit port waterways, are especially vulnerable to tampering, theft, and unauthorized persons gaining entry to collect information and commit unlawful or hostile acts.”

The Deepwater Program will posture the Coast Guard to operate far more effectively in this complex environment. When Deepwater is complete, cutters and aircraft will no longer operate as relatively independent platforms with only limited awareness of what surrounds them in the Maritime Domain. Instead, they will have the benefit of receiving information from a wide array of mission-capable platforms and sensors, enabling them to share a common operating picture as part of a network-centric force operating in tandem with other cutters, boats, and both manned aircraft and unmanned aerial vehicles (Figure 1).

Although originally conceived with deepwater missions in mind—those extending more than 50 nautical miles from U.S. coastlines—the Deepwater Program’s mobile multimission platforms are ideally suited for the wide range of homeland security operations encountered in U.S. ports, waterways, and coastal areas. Improved ship designs for Deepwater’s three classes of new cutters, for example, will provide better sea keeping and higher sustained transit speeds; greater endurance and range; and the ability for launch and recovery, in higher sea states, of improved small boats, helicopters, and unmanned aerial vehicles. These key attributes will enable the Coast Guard to implement more stringent maritime homeland security responsibilities, including jurisdiction over

foreign-flagged ships. Deepwater’s more capable cutters will be important players in the screening and targeting of vessels before they arrive in U.S. waters, onboard verification through boardings, and, if necessary, enforcement-control actions—more quickly, safely, and reliably.

The Deepwater Program’s manned and unmanned aircraft will deliver substantially more flight hours than today’s legacy systems and provide improved airborne use of force and vertical-insertion capabilities. These improvements will be of inestimable value to operational commanders in addressing today’s tremendous burden of balancing the mis-



Figure 2: The cutter USCGC *Vigilant*, homeported at Cape Canaveral, Fla., received the Deepwater Program’s final installation of its first increment of C4ISR system upgrades in November 2005. All 210-, 270-, and 378-class cutters are now outfitted with a classified local area network and have access to the Department of Defense’s Secret Internet Protocol Network—a key enabler for more effective maritime security patrols. USCG photo.

match between inadequate resources to growing mission requirements.

The Coast Guard’s existing inventory of HH-60J and HH-65 helicopters will be converted to multimission platforms outfitted with more-capable systems. Deepwater’s new CASA CN235-300M maritime patrol aircraft, upgraded HC-130 long-range search aircraft, and the Eagle Eye HV-911 vertical takeoff-and-landing unmanned aerial vehicle also will significantly increase search and surveillance areas from today’s levels.

Making a Difference Now

Turning from the future, the Deepwater Program is also about sustaining and modernizing today’s Coast

Guard. Recent upgrades to legacy platforms are making a difference now in improving operational performance until the transition to converted or new-construction platforms occurs.

In autumn 2005, for example, the final installation of Deepwater's initial increment of C4ISR upgrades was completed on the medium endurance cutter USCGC *Vigilant* (Figure 2). All 210-, 270-, and 378-class cutters are now outfitted with a classified local area network and have access to the Department of Defense's Secret Internet Protocol Network (SIPRNET), both under-way and in port. This Deepwater modernization

effort began with the first installation on the USCGC *Northland* in 2003 and corresponding installations ashore at the Communications Area Master Stations Atlantic and Pacific.

Deepwater C4ISR upgrades have already led to more successful mission performance at sea by increasing Maritime Domain Awareness and enabling more effective joint operations. Commanding officers on legacy cutters say Deepwater C4ISR upgrades have revolutionized their work—helping the Coast Guard to interdict and seize record levels of illegal drugs at sea during the past two years. Cutters outfitted with more capable Deepwater command-and-control upgrades also served with distinction during the Coast Guard's response to Hurricanes Katrina and Rita in 2005. They demonstrated their effectiveness enabling on-scene coordination of operations with local first responders and other federal agencies in ports like New Orleans, La., and Gulfport, Miss.

Deepwater also is funding other sustainment projects for older surface assets. Last May, the medium endurance cutter USCGC *Tampa* (Figure 3) was the first 270-ft. cutter to enter a nine-month major systems refurbishment at the Coast Guard Yard in Baltimore, Md., as part of the Mission Effectiveness Project (MEP).

MEP is a key part of the Deepwater strategy to allow the Coast Guard to bridge the gap until new cutters are delivered. This multi-year project for 210-foot and 270-foot cutters will replace obsolete and increasingly unsupportable systems, to improve reliability and reduce maintenance costs. Up to 27 of the 270-foot Bear Class cutters and 210-foot Reliance Class cutters will be phased into the yard's workload over the next several years to extend their service lives for an additional 10 to 15 years.

The Coast Guard's top aviation priority, Deepwater's accelerated re-engining of the workhorse HH-65 helicopters, also is progressing well. Three modernized HH-65C helicopters deployed during the Coast Guard's response to Hurricane Katrina; their aircrews saved 305 lives during 85 sorties. Compared to older and less reliable Bravo models, the more powerful and efficient HH-65C has twice the endurance on station (two hours and 30 minutes) and can hoist twice as many people (six).

With a recent contract award, the first of the six HC-130J long-range search aircraft will soon begin its "missionization" modifications, following final system design and engineering. Modifications will result in 90-percent C4ISR commonality with the CASA MPA. The J model of the venerable Hercules boasts



Figure 3: The medium endurance cutter USCGC *Tampa* sits high and dry at the Coast Guard Yard, Baltimore, Md., during a major systems refurbishment as part of the Mission Effectiveness Project for 210-ft. and 270-ft medium endurance cutters. Gordon I. Peterson, USCG.

improved power and performance over its predecessor and will easily convert for cargo and personnel transport missions, including the handling of oversized equipment.

Sustaining Momentum

Deepwater is postured to move forward with an appropriate sense of urgency. A fiscal year (FY) 2006 appropriation of \$933.1 million (later reduced by a 1 percent recision to \$923.8 million) allows the Coast Guard to sustain and modernize legacy cutters and aircraft to increase their useful service life while the acquisition of new assets advances (Figure 4).

Current Deepwater funding is expected to sustain our momentum in providing the Coast Guard with the more capable assets it needs to improve maritime homeland security, to implement the National Strategy for Maritime Security, and to perform all enduring core missions.

Deepwater's FY-2006 budget provides for:

- continuation of the production line for the National Security Cutter;
- continuation of design work for the first Offshore Patrol Cutter;
- completing the design and acquiring long-lead materials for the first Fast Response Cutter, now scheduled for delivery in 2008, 10 years ahead of its original schedule;
- the next phase of the Eagle Eye VUAV for testing;
- completion of re-engining of operational HH-65 helicopters (Figure 5) using two production lines;
- service-life extension and conversion of HH-60 helicopters and HC-130H LRS aircraft into Deepwater end-state aircraft and continued missionization of the Coast Guard's six HC-130J aircraft;
- service-life extension and electronics upgrades for legacy medium endurance cutters; and
- continued development of Deepwater's interoperable C4ISR system to improve Maritime Domain Awareness and provide a common operating picture.

The President's FY-2007 budget request for the Coast Guard includes \$934.4 million for the Deepwater Program—a major investment to enable the Coast Guard to be ready, aware, and responsive in the future, wherever and whenever it is needed. The Deepwater Program will not transform the Coast Guard overnight



Figure 4: President George W. Bush is joined by legislators, cabinet members, and law enforcement officials in the East Room of the White House as he signs the Homeland Security Appropriations Act for fiscal year 2006. The appropriation will sustain the Deepwater Program's momentum in modernizing and recapitalizing the Coast Guard's aging legacy assets. Courtesy Paul Morse, White House.

for its post-9/11 missions; progressive modernization and recapitalization are a marathon, not a sprint. Month by month and year by year, however, more capable Deepwater assets, linked by a network-centric system for C4ISR, will strengthen smart borders and protect the nation's ports, waterways, and coastal areas.

The Deepwater Program will progressively enable the Coast Guard's implementation of a layered, defense-in-depth maritime security strategy for what has been recognized as the nation's most valuable and vulnerable sector, the Maritime Domain. In this sense, the Deepwater Program is a critical investment in achieving a more secure American homeland and building a 21st-century Coast Guard.

About the author: RADM Patrick M. Stillman, the Integrated Deepwater System's first Program Executive Officer, leads the largest modernization and recapitalization program in Coast Guard history.



Figure 5: The Deepwater Program's re-engining of HH-65 helicopters has been accelerated as the Coast Guard's top aviation priority. Three re-engined HH-65C helicopters performed superbly during Hurricane Katrina rescue operations, saving 305 lives during 85 missions. As depicted here, older model helicopters undergo a comprehensive modernization during the re-engining process. PAC Jeff Murphy, USCG.